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## Original Communication

# Alleged drug facilitated sexual assault (DFSA) in Northern Ireland from 1999 to 2005. A study of blood alcohol levels

Janet Hall MB MSc (Principal Forensic Medical Officer, Child Abuse and Rape Enquiries (CARE), PSNI), Edward A. Goodall BA MSc (Research Design and Statistics), Tara Moore PhD NTF (Research Supervisor and Course Director for Masters in Forensic and Legal Medicine)\*

School of Biomedical Sciences, University of Ulster, Rm W1057, CMB, Cromore Road, Coleraine, Northern Ireland BT52 1SA, United Kingdom

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#### Abstract

Alleged sexual assault cases, identified from the forensic science Northern Ireland (FSNI) database, which had toxicology assays carried out on either blood or urine samples, were examined for the years 1999 up to and including 2005. In 1999 there were 30 toxicology requests while in 2005 there were 51, representing a 70% increase. The percentage of cases containing alcohol, drugs or both increased from 66% in 1999 to 78% in 2005.

The estimated average blood alcohol concentration remained broadly similar throughout the spread of years. It was found to be 218 mg% (milligrams per 100 millilitres) in 1999 and 217 mg% in 2005. The actual number of cases studied within the 12 h cut-off time rose from 9 in 1999 to 22 in 2005. The relationship between negative toxicology results and time delay between the alleged assault and forensic sampling was examined. This showed that between 44% and 74% of cases were found to have a time delay of >12 h. Some of these cases may therefore represent false negative results.

The presence of drugs, either alone or in combination with other drugs, doubled between 1999 and 2005. Increased identification was found with antidepressants, recreational drugs, benzodiazepines and analgesics, some of which were also associated with alcohol consumption.

The findings are sufficient to cause alarm for the health and safety of certain individuals and their increased vulnerability to sexual assault in some social settings. Additionally, the legal implications of what constitutes valid consent needs to be considered further in the light of these findings, if attrition rates are to improve.

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#### 1. Introduction

The definition of drug facilitated sexual assault (DFSA) has been modified with time, understanding and scientific evidence, such that, currently and subsequent to Operation

Matisse in 2006, at least two possible types of DFSA have been identified. These have been referred to as 'pro-active' and 'opportunistic'.<sup>1</sup>

Pro-active DFSA is defined as, "the covert or forcible administration to a victim of an incapacitating or disinhibiting substance by an assailant for the purpose of sexual assault."

Opportunistic DFSA is defined as, "sexual activity by an assailant with a victim who is profoundly intoxicated

<sup>\*</sup> Corresponding author. Tel.: +44 (0) 7793226873; fax: +44 (0) 2870324375

E-mail addresses: janet132@doctors.net.uk (J. Hall), t.moore@ulster. ac.uk (T. Moore).

by his or her own actions to the point of near or actual unconsciousness."<sup>1</sup>

Despite this differentiation, the notion of a 'date-rape' drug persists, in that the use of the term "spiking" is still commonplace. According to one source, spiking is regarded as a "significant problem". This perception persists according to a report from the Advisory Council on the Misuse of Drugs, the "Government's principal advisory drugs body. The Free Online Dictionary defines 'Spiking' as the addition of "a poison or other chemical: a drink-spiked with barbiturates."

Early studies originating in America identified a high prevalence of alcohol in cases of alleged sexual assault. <sup>4-6</sup> In one study, cannabinoids, cocaine, benzodiazepines, amphetamines and gammahydroxybutyrate (GHB) were also found, but were much less common than alcohol. <sup>4</sup> In another, less than 3% of positive samples contained GHB or flunitrazepam, <sup>5</sup> whilst in a third study, "alcohol, either alone or in combination with other drugs, was by far the commonest substance found, being present in 67.0% of positive samples."

Within the UK, a more recent study has indicated similar results, with 46% of samples containing alcohol either alone or in combination with an illicit and/or medicinal drug. In just 2% of cases a sedative or disinhibiting drug was identified, which had not been admitted, which the author suggested, could represent cases of deliberate spiking.

In 2006 an Australian study found that 77% of alleged DFSA cases had consumed alcohol "in the hours prior to the assault", whilst "49% reported using prescription medications and 26% reported the use of recreational drugs". This study also revealed that, in 20% of cases, drugs were detected which had not been reported. These included cannabis, antidepressants, amphetamines, benzodiazepines and opiates.<sup>8</sup>

Scientific research from America, Australia and the United Kingdom has consistently confirmed earlier findings that alcohol is the major contributor to vulnerability to sexual assault. The extent of this vulnerability has been quantified by the method of back calculation. Using this method, one study found that, in 60% of cases, the blood alcohol concentration (BAC) at the time of the assault was estimated to be at least 150 mg/ml (150 mg%). Others have shown, that whilst 77% of the subjects had consumed alcohol prior to the alleged incident, the average BAC was 0.11% (equivalent to 110 mg%) at the time of the examination, equating to "an average BAC of 0.22–0.33% at the time of the alleged assault" (equivalent to 220–330 mg%), "which represents the consumption of at least 20 standard drinks."

No information currently exists on the extent, if any, of alcohol or drug involvement in reported sexual offences in Northern Ireland. <sup>10</sup>

It is the belief that youth drunkenness in Northern Ireland is similar to that in the rest of the UK. 11 Since the year 2000 findings have indicated that more girls have experienced drunkenness than boys. 11

One role of the Northern Ireland forensic medical officers (FMOs) is to carry out medical examinations of complainants of alleged sexual assault on behalf of the police service of Northern Ireland (PSNI), for the purposes of crime investigation. Forensic analysis of blood and urine samples is carried out to detect the presence of alcohol and/or drugs. The forensic samples are sent to the forensic service Northern Ireland (FSNI) for analysis, when the allegation is pursued, along with a completed proforma containing details relevant to each case. The clinical impression existed that the involvement of alcohol in cases of alleged sexual assault had increased over time, whilst the act of drink-spiking using daterape drugs continued to remain a theoretical possibility.

The aims of this study were to identify the extent and types of drugs found in cases of sexual offences reported to the police; the quantities of alcohol taken and the trends in both from 1999 to 2005, within Northern Ireland.

It was hypothesised that the extent of involvement of alcohol would increase over time, whilst the extent of the involvement of drugs was unclear.

#### 2. Methods

Retrospective data was obtained from the FSNI database of alleged sexual offences between the years 1999 and 2005. The database contains anonymised information of all cases sent to FSNI, which required toxicological, biological and/or DNA assay. Resource limitations placed restrictions on the data available for analysis.

Only cases where toxicological requests had been made for drug and/or alcohol assays, from either blood and/or urine samples were entered for the study. Cases without toxicology assays were excluded from the study. Examples of excluded cases would be young age of complainant, (alleged Child Sexual Abuse), allegations made by elderly complainants, historical or delayed reported cases, or cases of murder or sudden unexplained death where sexual assault would also have been considered.

The toxicology data was scrutinised to identify cases where blood samples had been obtained within 12 h of the alleged assault, in order to maximise accuracy of back calculation. The blood alcohol levels were then subjected to a calculation to determine the likely blood alcohol concentration (BAC) at the time of the alleged sexual assault by the method of back calculation. As in previous studies an elimination rate of 18 mg%/h was used. This assumes that no alcohol was consumed after the alleged assault. No calculations were made on urinary alcohol levels as these are considered to be less precise.

Cases in which drugs, other than alcohol, were identified have also been recorded.

Trend lines for the data set were computed using regression analysis. Statistical significance of their slopes was assessed using Snedecor's *F*-test.

#### 3. Results

In 1999, 30, out of a total of 107 cases of alleged or possible sexual assaults, which were submitted for forensic analysis and entered onto the database, had toxicology requests for drugs and/ or alcohol levels, see Table 1.

Of the 30 cases analysed, 10 revealed the presence of alcohol only, two contained both alcohol and drugs whilst eight cases contained drugs only. Therefore, out of those samples for which toxicology was requested, 66% contained alcohol alone, drugs alone or both.

The remaining 33% were free from both alcohol and drugs.

The same analysis was used for each year to identify the number of samples which contained alcohol alone, drugs alone, both alcohol and drugs or neither. Information from one case in 2004 and two from 2005 was not available for analysis.

Table 1 indicates the results for each sample year. Figs. 1–3 demonstrate the trend in cases containing alcohol or drugs (Fig. 1), alcohol and drugs (Fig. 2) and cases free from either alcohol or drugs (Fig. 3) from 1999 to 2005, expressed as a percentage of total toxicology requests.

The percentage of cases containing alcohol rose from 40% in 1999 to 65% in 2005. This represents an increase of 63%. The percentage of cases containing drugs rose from 33% in 1999 to 39% in 2005. This represents an increase of 18%. Fig. 2 shows the percentage of all cases containing alcohol and/or drugs and the trend since 1999. The rise from 66% in 1999 to 78% in 2005 represents an increase of 18%. Fig. 3 shows the falling trend in cases free from alcohol or drugs, from 33% in 1999 to less than 18% in 2005. This is equivalent to a reduction of 45% or almost half of cases tested.

Although the slopes of these trend lines were not statistically significant, this may have been due to the fact that there were only seven years of data included in the study. Notably however, for Fig. 3, the F-statistic was 2.9 (p = 0.149). If the trend highlighted here continues the additional data may result in statistical significance.

### 4. Estimated alcohol levels

In 1999, of the 12 cases where alcohol had been identified (10 containing alcohol only + 2 combined with drugs), sufficient data existed to enable back calculations to be made on nine, where blood samples had been taken less than 12 h from the alleged assault. In the three remaining cases, two had no times recorded on the database, whilst in the third case a time delay of more than 24 h had elapsed. For the year 1999 the BAC range was found to be105–304 mg%, with an average alcohol concentration of 218 mg%. Blood alcohol concentrations were calculated for each sample year using the same procedure. The results are represented on Table 2.

Within each year, cases where negative toxicology results had been obtained were examined. In 1999 for example, 10 cases, where toxicology requests were made, were free from alcohol and drugs. The number of cases, within each sample year, containing neither alcohol nor drugs is shown in Table 3.

The figures show that between 44% and 74% of negative toxicology results were obtained when the samples were taken more than 12 h after the alleged incident.

#### 5. Drug identification

From the 1999 data, drug identification in 10 cases (8 containing drugs only +2 in combination with alcohol) revealed the presence of paracetamol, venlafaxine, toluene, codeine, morphine, cannabis, diazepam and metabolites, dihydrocodeine, diamorphine, MDMA, MDA, cocaine metabolite, temazepam and cannabinoids.

Five of these cases revealed single drug identification (paracetamol  $\times 3$ , antidepressant  $\times 1$  and toluene  $\times 1$ ) whilst the other five revealed multiple drug identification.

In 2000, seven cases were found to contain drugs, five of these also contained alcohol. Paracetamol was the commonest drug identified, in four cases combined with other drugs and once as a single drug.

In 2001, eight cases contained drugs, four of these also contained alcohol. Of the eight cases, four tested positively

Table 1
Annual number of sexual assault cases in Northern Ireland, from 1999 to 2005, obtained from FSNI database, where alcohol and/or drugs were identified from toxicology sampling

Year	Total toxicology requests	Blood alcohol positive	Alcohol and drugs detected	Drugs only detected	% Containing alcohol, drugs or both	Urinary alcohol positive	None
1999	30	10	2	8	66	0	10
2000	36	8	5	2	42	0	21
2001	21	7	4	4	71	0	6
2002	61	26	14	6	75	0	15
2003	47	18	2	3	64	7	17
2004	48 <sup>a</sup>	13	13	7	71	1	13
2005	51 <sup>b</sup>	16	13	7	78	4	9

<sup>&</sup>lt;sup>a</sup> One case lacked sufficient data for inclusion.

<sup>&</sup>lt;sup>b</sup> Two cases lacked sufficient data for inclusion.

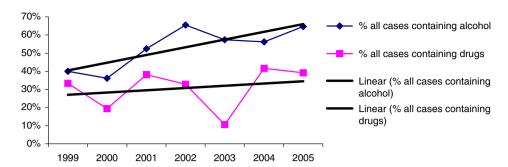


Fig. 1. Cases containing alcohol or drugs, from 1999 to 2005, and the trend in both, expressed as a percentage of total toxicology requests.

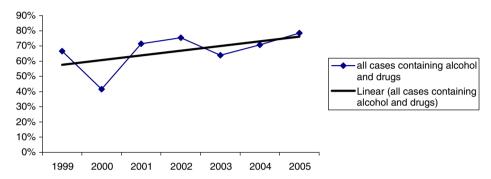


Fig. 2. All cases containing alcohol and drugs, from 1999 to 2005, and the overall trend, expressed as a percentage of the total toxicology requests.

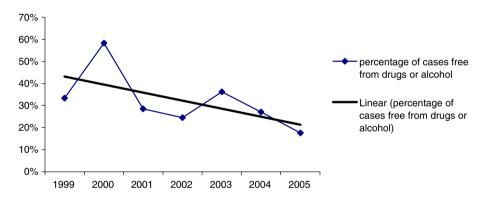


Fig. 3. The trend in cases free from alcohol or drugs from 1999 to 2005, expressed as a percentage of the total toxicology requests.

Table 2
Estimated BAC range and average BAC obtained for each year 1999–2005

Year	BAC range (mg%)	No. of cases	Average BAC (mg%)
1999	105–304	9	218
2000	97–257	7	184
2001	96-231	5	168
2002	102-406	20	194
2003	124-311	13	186
2004	101-341	21	200
2005	108-388	22	217

for recreational drugs, cannabis  $\times 2$ , and MDMA  $\times 2$ , three contained benzodiazepines and two paracetamol.

Results for 2002 revealed double the number of cases containing drugs, N = 20, 70% of which also contained alcohol. Almost half of these cases contained benzodiazepines, N = 9. Seven tested positively for recreational drugs

whilst five contained analgesics, paracetamol, codeine or dihydrocodeine.

In 2003, five cases were found to contain drugs, out of a total of 47 toxicology requests submitted. Of these five, two also contained alcohol. No clear pattern of drug identification can be identified for this year with such small numbers.

In 2004, 48 samples were submitted. Twenty revealed positive drug assays, 13 of which also contained alcohol. The commonest group of drugs identified was the analgesic group, N=11. Seven samples contained paracetamol whilst six contained either codeine or dihydrocodeine. Benzodiazepines and recreational drugs were found in equal numbers, seven in each group. Fifty percent of these cases were shown to contain more than one drug.

By 2005, 20 cases were found to contain drugs. Of these 20, 13 also contained alcohol. Again the analgesic group

Table 3
Cases where time delay between the alleged assault and forensic sampling was greater than 12 h and which had negative toxicology results, expressed as a percentage of the total negative toxicology requests

Year	Total no of toxicology requests	Number of cases free from either drugs or alcohol	Number of negative cases where time delay > 12 h	% negative results with time delay > 12 h
1999	30	10	6	60
2000	36	21	12	57
2001	21	6	3	50
2002	49	15	7	46
2003	47	17	12	74
2004	48	13	7	54
2005	51	9	4	44

was the commonest drug group identified, 11 cases in total tested positively. Of these, 10 were positive for opioids, some of these also contained paracetamol. Recreational

drugs were found in eight samples. Six samples tested positively for benzodiazepines. Almost half of the cases (9 out of 20) in 2005 contained more than one drug. The results are shown in Table 4.

#### 6. Discussion

Alleged sexual assault cases were considered for this study when toxicology samples had been requested from either blood or urine samples, at the time of the medical examination. Many other alleged possible sexual assault cases were excluded, as no toxicology samples had been obtained at the time of the forensic medical examination. There may be a number of reasons for the absence of requests for toxicology sampling. Some have already been mentioned such as younger age (pre-pubertal) or elderly complainants. Delayed reporting, >24 h, would also

Table 4

Drug identification taken from either blood or urine samples, in cases of alleged sexual assault from 1999 to 2005

Year $N = No.$ of cases	Single drug found	Two or more drugs found
1999 $N = 10$	• Paracetamol (×3)	• Codeine + morphine
	<ul> <li>venlafaxine</li> </ul>	<ul> <li>Diazepam + cannabis</li> </ul>
	<ul> <li>toluene</li> </ul>	<ul> <li>Diazepam, DHC + codeine</li> </ul>
		<ul> <li>Morphine + codeine, diamorphine,</li> </ul>
		MDMA, MDA, cocaine metabolite,
		temazepam + cannabinoids
		<ul> <li>Diazepam + codeine</li> </ul>
$2000 \ N = 7$	<ul> <li>Paracetamol</li> </ul>	<ul> <li>Paracetamol + morphine</li> </ul>
	<ul> <li>Cannabis</li> </ul>	<ul> <li>Paracetamol + cannabis</li> </ul>
	<ul> <li>Diazepam + metabolites</li> </ul>	<ul> <li>Paracetamol + codeine (×2)</li> </ul>
$2001 \ N = 8$	<ul> <li>Amphetamine</li> </ul>	• Paracetamol + codeine
	<ul> <li>Cannabis</li> </ul>	<ul> <li>Paracetamol + clobazam</li> </ul>
	<ul> <li>Diazepam</li> </ul>	<ul> <li>Temazepam, oxazepam + cannabinoids</li> </ul>
	• MDMA (×2)	• • •
$2002 \ N = 20$	• Diazepam(×7)	<ul> <li>Paracetamol + diazepam</li> </ul>
	<ul> <li>Cannabinoids (×6)</li> </ul>	<ul> <li>Paracetamol + cannabis</li> </ul>
	• Codeine	<ul> <li>DHC + diazepam + metabolite</li> </ul>
	<ul> <li>Dihydrocodeine</li> </ul>	
	<ul> <li>Dothiepin</li> </ul>	
	Venlafaxine	
$2003 \ N = 5$	• Diazepam (×2)	• Codeine + tramadol + trazodone
	• Temazepam	
	Cannabinoid	
$2004 \ N = 20$	<ul> <li>Paracetamol (4)</li> </ul>	• Paracetamol + codeine (2)
	• Diazepam (2)	• Paracetamol + temazepam + cannabinoid
	• Citalopram	• Paracetamol + salicylic acid + codeine + morphine
	Mirtazapine	• DHC + diazepam + cannabinoids
	Cannabinoid	• DHC + diazepam + temazepam + cannabinoids
	• MDMA	• Codeine + morphine
	- 1/12/1/11	• MDMA + cocaine
		• MDMA + diazepam
		Venlafaxine, diazepam, codeine, ephedrine + DHC
2005 N = 20	• Paracetamol (×2)	• Diazepam + codeine
2003 17 — 20	• Cannabinoids (×3)	<ul> <li>Cocaine + chlordiazepoxide + citalopram + cannabinoid</li> </ul>
	• Codeine (×2)	• DHC + paracetamol
	• Citalopram (×2)	Codeine + paracetamol
	• Diazepam	• Citalopram + codeine + morphine + paracetamol
	MDMA + MDA	<ul> <li>Citaloprani + codenie + morphine + paracetamor</li> <li>Diazepam + chlordiazepoxide + cannabinoids</li> </ul>
	• MDMA   MDA	<ul> <li>MDMA + MDA + venlafaxine + morphine</li> </ul>
		• Diazepam + chlordiazepoxide + venlafaxine + codeine
		<ul> <li>Codeine + paracetamol + diazepam + cannabinoids</li> </ul>

reduce the relevance of blood alcohol estimations, although urine sampling could still yield positive results for drugs which are slowly excreted, such as cannabis.

Alternatively, clinical indications for the need for blood and/or urine sampling may not have warranted such sampling or there might have been a variation in clinical practice within the medical assessment, since no definitive protocol existed for the identification of possible DFSA cases. Variations within clinical practice have previously been identified with this type of study.<sup>8</sup>

However, from the cases that were used, it was clear that the number of toxicology requests entered onto the FSNI database rose from 30 in 1999 to 51 in 2005. One possible explanation for this increase in requests might be that a change in practice took place following the publication of scientific evidence containing recommendations such as "early collection of forensic samples (blood and urine)" should be carried out "in all cases where drugs might have been involved." In 1999, similar recommendations were directed specifically towards forensic physicians "involved in the examination of complainants in sexual assault cases". Similar increases in reporting during these years have been found elsewhere. 14

The rise in requests has revealed that the percentage of cases containing alcohol, drugs or both rose from 66% in 1999 to 78% in 2005. Former researchers have recognised the association between reported allegations of sexual assault and social activity, 1,9 although, to the author's knowledge, this association has not been studied in Northern Ireland nor has a trend been identified.

Fig. 1 represents the cases containing alcohol and those containing drugs from 1999 to 2005, and the trend in both, expressed as a percentage of the total toxicology requests. A rise from 40% in 1999 to 65% in 2005 was identified for alcohol. Whilst the general trend appears to increase, the slope was not statistically significant, thus indicating a need for continued monitoring. Similarly, the trend in drug detection from 1999 to 2005 is generally upwards (trend line range is 27–35%).

Fig. 2 demonstrates an overall upward trend in the percentage of cases containing both alcohol and drugs. Although the slope was not statistically significant, additional years may elucidate this trend further.

Fig. 3 shows the trend in cases, found to be free from either alcohol or drugs, expressed as a percentage of the toxicology requests. A decrease can be seen such that in the later study years fewer cases have been free from either alcohol or drugs.

Estimated alcohol levels, at the time of the alleged assault, fell within the range of 105–304 mg% in 1999 and 108–388 mg% in 2005. The average BAC was found to be 218 mg% in 1999 and 217 mg% in 2005. This indicates that whilst the range was greater in 2005 compared to 1999, with higher BACs in some cases, the average BAC remained the same. However, what has changed is the actual number of cases with high estimated alcohol levels. By 2005, more than twice the number of cases (9 in 1999)

compared to 22 in 2005) could be identified for back calculation in order to estimate the alcohol level at the time of the alleged assault. (i.e., the samples were taken within 12 h of the alleged assault.)

To gain a perspective on blood alcohol levels, the statutory drink-driving limit is 80 mg%. This is often quoted for comparison. At twice this limit, it has been suggested that this level should be "regarded as sufficient to cause drunkenness in a social drinker".

The stage of excitement is recognised between 90 and 250 mg%, with effects such as emotional instability, loss of critical judgement, impairment of perception, memory and comprehension, decreased sensory perception, motor inco-ordination and impaired balance. The stage of confusion occurs between 180 and 300 mg% with effects such as disorientation, mental confusion, dizziness, exaggerated emotional states, disturbance of vision, disturbance of motion, increased pain threshold, increased motor inco-ordination, staggering gait, slurred speech, apathy and lethargy. 12

The high or very high alcohol levels, found in this study, which are estimated to have existed at the time of the alleged assault, must again raise the issue of capacity to give informed consent and the legal consequences as a result.<sup>2,7,8</sup>

The study also looked at cases where the toxicology results were negative within each sample year. (Table 3). Notably, a proportion (60% in 1999 compared to 44% in 2005) was found to be negative when the samples were taken more than 12 h after the alleged assault. Delayed reporting might or might not be relevant in these cases. Without specific case details, no conclusions should be drawn from these figures. However, as has previously been suggested, a delay of more than 24 h after the incident may result in a false negative result, since any alcohol which might have been present could have been metabolised and completely eliminated by the time the samples were taken. Therefore, results featuring alcohol or other rapidly eliminated compounds, such as gammahydroxybutyrate (GHB), should be regarded as possible underestimates. 6.8

The study identified the presence of drugs, other than alcohol, from both blood and urine samples for each year. The relationship with the presence of alcohol has not been studied.

Table 4 shows that the number of cases containing drugs doubled from 1999 to 2005 ( $N=10,\,N=20$ , respectively). The table also shows the number of cases containing a single drug and cases containing more than one drug. In 1999, for example, five cases tested positively for a single drug (three for paracetamol, one for venlafaxine and one for toluene) whilst in five cases multiple drug identification was found. The figures for 2005 show that the number of cases containing a single drug had risen to 11, whilst the number of cases which contained more than one drug increased to nine.

The largest group of drugs identified was the analgesic group, either alone, in combination with other analgesics

or combined with benzodiazepines or recreational drugs. It is probably safe to assume that these drugs were consumed voluntarily, possibly post-assault, and had not been used surreptitiously for the purposes of sexual gratification.

The second largest group of drugs identified was the benzodiazepine group. Some cases containing benzodiazepines would also have tested positive for alcohol. This may be one possible group where voluntary use would be less certain. Some of these cases may represent examples of true drink-spiking.

Hindmarch et al. reported similar difficulties in determining whether the presence of benzodiazepines was "due to spiking of drinks or from a legitimate medical prescription". Alternatively, the high number of positive results for benzodiazepines may be a reflection of prescribing practice within Northern Ireland, similar to the prescribing practice of benzodiazepines in the rest of the UK, suggested by Scott-Ham and Burton. It is also possible that some benzodiazepines may have been used in some cases for recreational rather than therapeutic purposes.

Conventional recreational drugs tested positive in all years. Their use would appear to have increased both as a single ingestion and in combination with other drugs. Two cases were detected in 1999, one containing cannabis and diazepam, the other containing MDMA (Ecstasy), cocaine metabolite, cannabinoids, opiate analgesia and temazepam. Two cases were also identified in 2000. One of these revealed cannabis alone, the other cannabis with paracetamol. By 2005, however, eight cases tested positively, four as a single drug and four combined with other drugs. On this occasion, six cases revealed cannabis whilst in two cases, MDMA was identified. This finding may be a reflection of the increase in samples sent for toxicology, or it may represent an actual increase in the use of such substances in the population under study. Other larger studies have shown similar drug identification.<sup>6-8</sup> Hindmarch and colleagues failed to identify a particular trend in the patterns of drugs over a 3.5 year period. Scott-Ham and Burton found over half of their cases (65%) "contained either alcohol and/or an illicit drug or drugs" but did not study trends, whilst in Australia, Hurley et al. found concomitant use of alcohol and other psychoactive drugs, prescribed and recreational, in many individuals, without studying trends.8

#### 7. Conclusions

This project hypothesised that there would be an increased involvement of alcohol in cases of alleged sexual assault, reported to the police, over the period of time studied.

The project was limited to the study of cases where toxicology requests were made for forensic analysis and which were entered onto the FSNI database.

As the number of requests increased each year, more cases were shown to contain alcohol and this trend appears to increase throughout the study period. In addition, the number of cases where high or very high alcohol levels were found also increased over the study period. Further studies are essential to continue monitoring these trends in subsequent years.

The involvement of drugs in DFSA was unclear, despite widespread speculation of drink-spiking in social situations. The study found that the number of cases containing drugs, other than alcohol, doubled within the years studied. By 2005, identification of analgesics rose by 60%, benzodiazepines by 100%, recreational drugs by 300% and antidepressants by 500%. The greatest difference in drug identification, from 1999 to 2005, was found within the antidepressant and recreational groups and included drugs such as citalopram ( $\times$ 4), venlafaxine ( $\times$ 2), cannabis ( $\times$ 6), cocaine ( $\times$ 1) and ecstasy ( $\times$ 2), although the numbers were relatively small. These trends should give rise to serious concerns.

This study, like others, has failed to identify a specific date-rape drug, such as GHB or Rohypnol (flunitraze-pam). 1,4,6-8 Delays in reporting are thought to have created the same problems in identification of possible culprits such as GHB, due to its rapid metabolism and elimination. Delayed or even non-reporting of sexual offences, for forensic purposes, is not unique to Northern Ireland. 2,4

A prospective study is now required in Northern Ireland in order to establish a more accurate picture of the involvement of alcohol and drugs in cases of alleged sexual assault, from both forensic and therapeutic settings. This mirrors the need for more accurate information within England and Wales, "to tackle drug facilitated sexual assault and find out the true extent of the problem."<sup>2</sup>

A consultation exercise has been initiated within Northern Ireland to develop a Regional Strategy to address Sexual Violence. One of the initial tasks of this exercise is to "understand the nature and extent of sexual violence and to plan and evaluate preventative interventions and develop support services. To address these proposals, the consultation document states, "It will be essential to establish a more complete picture of incidence/prevalence [of sexual violence], and to understand more about victims, their abusers, the context in which the abuse takes place, the impact it has, and the patterns of disclosure." 10

One possible mechanism, which could be employed in future studies, (with permission), would be the use of a DFSA questionnaire, similar to that in Appendix A, Operation Matisse, which would be completed when a case first presents, to either a therapeutic or forensic environment. Additionally, a more accurate picture of the true incidence of DFSA cases might be obtained if all reported victims of sexual assault were requested to provide blood and urine samples at the time of the medical examination for toxicology screening to ascertain drug and alcohol levels at the relevant time.

#### **Conflict of Interest**

None declared.

#### **Funding**

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### **Ethics Approval**

This research was performed in accordance with research governance and ethical regulations which were adhered to at all times. Ethical approval was obtained from the University of Ulster Ethics Committee. All information was anonymised, whilst specific details of the alleged events were absent. Every effort was made to ensure that personal identification could not take place by any reader.

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